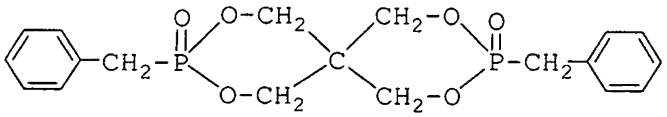
Claims

1. A flame retardant resin composition comprising:
(A) 100 parts by weight of a resin component (component a) which substantially comprises a high impact polystyrene having a reduced viscosity η_{sp}/c, of 0.2 to 1.5 dl/g, and
(B) 1 to 50 parts by weight of a phosphorus-containing compound (component b-2) represented by the following formula (I-2-a):



(I-2-a)

wherein the resin composition can achieve retention of a heat distortion temperature under load (M) represented by the following expression of at least 95%.

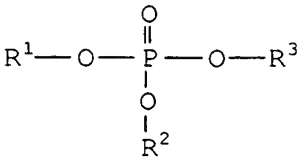
$$M\ (\%) = (y/x) \times 100$$

wherein x represents a heat distortion temperature under load (°C) of an article molded from the resin component (component a) and y represents a heat distortion temperature under load (°C) of an article molded from a resin composition comprising the resin component (component a) and the phosphorus-containing compound (component b-2).

2. The resin composition of claim 1, which can achieve at least a flame retardancy level V-2 in an UL94 Standard.

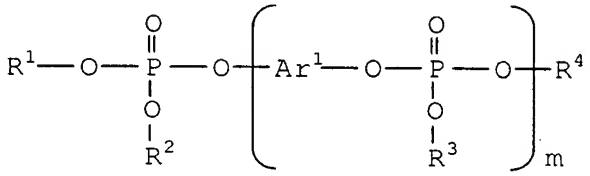
3. The resin composition of claim 1, which further contains at least one compound (component c) selected from the group consisting of the following compounds (c-1) to (c-5) in an amount of 1 to 100 parts by weight based on 100 parts by weight of the phosphorus-containing compound (component b-2) represented by the general formula (I-2-a).
(c-1) red phosphorus
(c-2) triaryl phosphate represented by the following formula

(c-2)



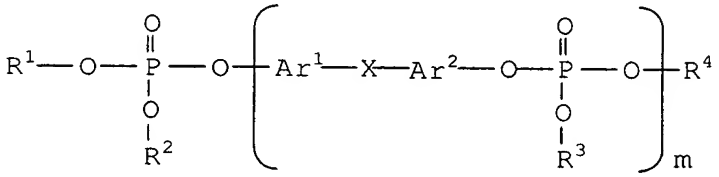
(c-2)

(c-3) condensed phosphate represented by the following formula (c-3)



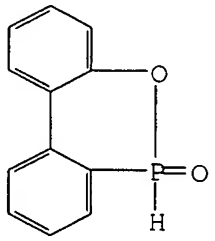
(c-3)

(c-4) condensed phosphate represented by the following formula (c-4)



(c-4)

(c-5) compound represented by the following formula (c-5)



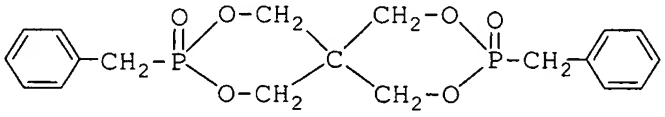
(c-5)

wherein in the formulae (c-2) to (c-4), R^1 to R^4 may be the same or different and represent an aryl group having 6 to 15 carbon atoms which may be substituted by one to five groups selected from an alkyl group having 1 to 12 carbon atoms, an alkoxy group having 1 to 12 carbon atoms, an alkylthio group having 1 to 12 carbon atoms and a group $-Y-Ar^3$ (wherein Y represents -O-, -S- or an alkylene group having 1 to 8 carbon atoms, and Ar^3 represents an aryl group having 6 to 15 carbon atoms), Ar^1 and Ar^2, if both are present, may be the same or different and represent an arylene group having 6 to 15 carbon atoms which may be substituted by one to four groups selected

from an alkyl group having 1 to 4 carbon atoms, an aralkyl group having 7 to 20 carbon atoms and a group $-Z-R^5$ (wherein Z represents -O- or -S-, and R^5 represents an alkyl group having 1 to 4 carbon atoms or an aryl group having 6 to 15 carbon atoms), X represents a single bond, -O-, -CO-, -S-, $-SO_2-$ or an alkylene group having 1 to 3 carbon atoms, and m represents an integer of 1 to 5; and two benzene rings in the formula (c-5) each may have one to four substituents selected from the same substituents as those for the aryl groups represented by R^1 to R^4.

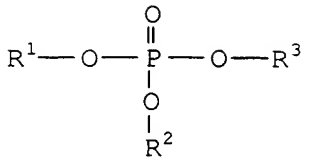
4. The resin composition of claim 1, which further contains dicumyl in an amount of 0.01 to 3 parts by weight based on 100 parts by weight of the resin component (component a).

5. A flame retardant resin composition comprising:
(A) 100 parts by weight of a resin component (component a) which substantially comprises a high impact polystyrene having a reduced viscosity η_{sp}/c, of 0.2 to 1.5 dl/g,
(B) 1 to 50 parts by weight of a phosphorus-containing compound (component b-2) represented by the following formula (I-2-a):



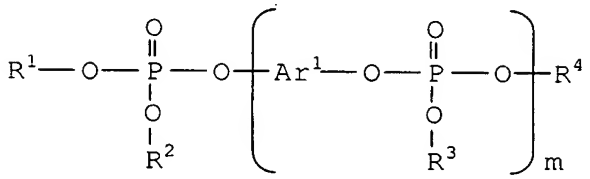
(I-2-a)

and
(c) 1 to 100 parts by weight based on 100 parts by weight of the phosphorus-containing compound (component b-2) of at least one compound (component c) selected from the group consisting of the following compounds (c-1) to (c-5):
(c-1) red phosphorus
(c-2) triaryl phosphate represented by the following formula (c-2)



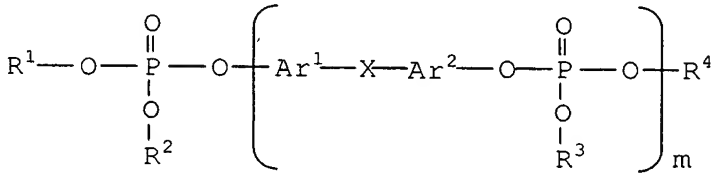
(c-2)

(c-3) condensed phosphate represented by the following formula (c-3)



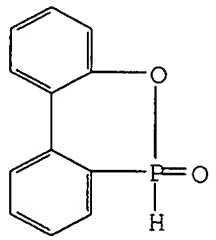
(c-3)

(c-4) condensed phosphate represented by the following formula (c-4)



(c-4)

(c-5) compound represented by the following formula (c-5)

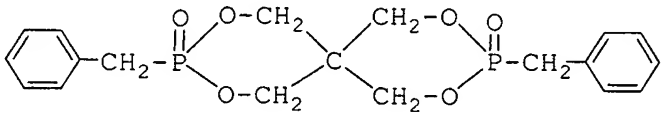


(c-5)

wherein in the formulae (c-2) to (c-4), R^1 to R^4 may be the same or different and represent an aryl group having 6 to 15 carbon atoms which may be substituted by one to five groups selected from an alkyl group having 1 to 12 carbon atoms, an alkoxy group having 1 to 12 carbon atoms, an alkylthio group having 1 to 12 carbon atoms and a group $-Y-Ar^3$ (wherein Y represents -O-, -S- or an alkylene group having 1 to 8 carbon atoms, and Ar^3 represents an aryl group having 6 to 15 carbon atoms), Ar^1 and Ar^2, if both are present, may be the same or

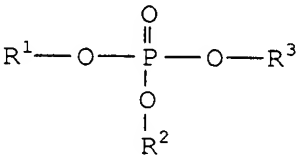
different and represent an arylene group having 6 to 15 carbon atoms which may be substituted by one to four groups selected from an alkyl group having 1 to 4 carbon atoms, an aralkyl group having 7 to 20 carbon atoms and a group $-Z-R^5$ (wherein Z represents -O- or -S-, and R^5 represents an alkyl group having 1 to 4 carbon atoms or an aryl group having 6 to 15 carbon atoms), X represents a single bond, -O-, -CO-, -S-, $-SO_2-$ or an alkylene group having 1 to 3 carbon atoms, and m represents an integer of 1 to 5; and two benzene rings in the formula (c-5) each may have one to four substituents selected from the same substituents as those for the aryl groups represented by R^1 to R^4.

6. A flame retardant resin composition comprising:
(A) 100 parts by weight of a resin component (component a) which substantially comprises a high impact polystyrene having a reduced viscosity η_{sp}/c, of 0.2 to 1.5 dl/g,
(B) 1 to 50 parts by weight of a phosphorus-containing compound (component b-2) represented by the following formula (I-2-a):



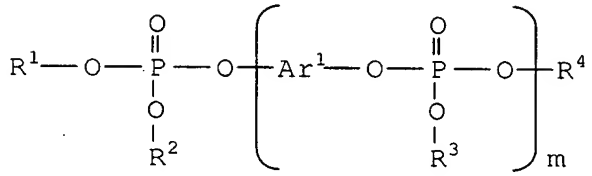
(I-2-a)

(c) 1 to 100 parts by weight based on 100 parts by weight of the phosphorus-containing compound (component b-2) of at least one compound (component c) selected from the group consisting of the following compounds (c-1) to (c-5):
(c-1) red phosphorus
(c-2) triaryl phosphate represented by the following formula (c-2)



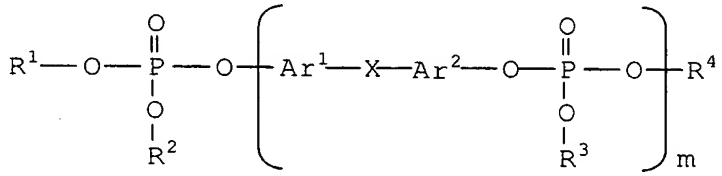
(c-2)

(c-3) condensed phosphate represented by the following formula (c-3)



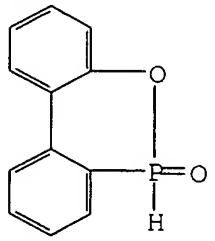
(c-3)

(c-4) condensed phosphate represented by the following formula (c-4)



(c-4)

(c-5) compound represented by the following formula (c-5)



(c-5)

wherein in the formulae (c-2) to (c-4), R^1 to R^4 may be the same or different and represent an aryl group having 6 to 15 carbon atoms which may be substituted by one to five groups selected from an alkyl group having 1 to 12 carbon atoms, an alkoxy group having 1 to 12 carbon atoms, an alkylthio group having 1 to 12 carbon atoms and a group $-Y-Ar^3$ (wherein Y represents -O-, -S- or an alkylene group having 1 to 8 carbon atoms, and Ar^3 represents an aryl group having 6 to 15 carbon atoms), Ar^1 and Ar^2, if both are present, may be the same or different and represent an arylene group having 6 to 15 carbon atoms which may be substituted by one to four groups selected from an alkyl group having 1 to 4 carbon atoms, an aralkyl group having 7 to 20 carbon atoms and a group $-Z-R^5$ (wherein Z represents -O- or -S-, and R^5 represents an alkyl group having 1 to 4 carbon atoms or an aryl group having 6 to 15

carbon atoms), X represents a single bond, -O-, -CO-, -S-, $-SO_2-$ or an alkylene group having 1 to 3 carbon atoms, and m represents an integer of 1 to 5; and two benzene rings in the formula (c-5) each may have one to four substituents selected from the same substituents as those for the aryl groups represented by R^1 to R^4, and

(D) 0.01 to 3 parts by weight based on 100 parts by weight of the resin component (component a) of dicumyl (component d).